

# State of Colorado Oil and Gas Conservation Commission

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Document Number:

402569737

Receive Date:

Report taken by:

## Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27. This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

### OPERATOR INFORMATION

|                                       |                                     |                        |
|---------------------------------------|-------------------------------------|------------------------|
| Name of Operator: CAERUS PICEANCE LLC | Operator No: 10456                  | <b>Phone Numbers</b>   |
| Address: 1001 17TH STREET #1600       |                                     | Phone: (970) 285-2925  |
| City: DENVER State: CO Zip: 80202     |                                     | Mobile: (970) 640-6919 |
| Contact Person: Blair Rollins         | Email: brollins@caerusoilandgas.com |                        |

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 15947

Initial Form 27 Document #: 402475596

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water                   |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure                             | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                 | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project                                  |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste                      | <input type="checkbox"/> Rule 906.c.: Director request   |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____   |

#### SITE INFORMATION

N Multiple Facilities ( in accordance with Rule 909.c. )

|  |                     |                        |  |
|--|---------------------|------------------------|--|
| Facility Type: SPILL OR RELEASE                | Facility ID: 477096 | API #: _____           | County Name: GARFIELD                      |
| Facility Name: Unocal 4 K04 dumlaine release   | Latitude: 39.555477 | Longitude: -108.114527 |  |
| ** correct Lat/Long if needed: Latitude: _____ |                     | Longitude: _____       |  |
| QtrQtr: SENW                                   | Sec: 4              | Twp: 6S                | Range: 96W Meridian: 6 Sensitive Area? Yes |

#### SITE CONDITIONS

General soil type - USCS Classifications GP

Most Sensitive Adjacent Land Use Non-crop land

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

#### Other Potential Receptors within 1/4 mile

Parachute Creek is located 0.18 miles to the west.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- ☒ E&P Waste      ☐ Other E&P Waste      ☐ Non-E&P Waste
- ☒ Produced Water      ☐ Workover Fluids
- ☐ Oil      ☐ Tank Bottoms
- ☒ Condensate      ☐ Pigging Waste
- ☐ Drilling Fluids      ☐ Rig Wash
- ☐ Drill Cuttings      ☐ Spent Filters
- ☐ Pit Bottoms
- ☐ Other (as described by EPA)

## DESCRIPTION OF IMPACT

| Impacted? | Impacted Media | Extent of Impact | How Determined                |
|-----------|----------------|------------------|-------------------------------|
| Yes       | SOILS          | TBD              | Laboratory analytical results |

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Upon discovery of the spill, Caerus shut in the wells to stop the release. Caerus utilized manual excavation to determine if the extents of contamination could be identified for the release. Soil samples were collected to verify compliance with COGCC Table 910-1 standards for the project.

## PROPOSED SAMPLING PLAN

### Proposed Soil Sampling

- ☒ Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Additional sampling activities will be grab samples to determine spill compliance, and composite samples for spoils pile characterization.

### Proposed Groundwater Sampling

- ☐ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Proposed Surface Water Sampling

- ☐ Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

## Additional Investigative Actions

- ☒ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

If groundwater is encountered during the drilling process, Caerus will collect attempt to collect a sample for analysis of COGCC Table 910-1 groundwater analytes.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 18  
Number of soil samples exceeding 910-1 5  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1800

### NA / ND

-- Highest concentration of TPH (mg/kg) 5540  
-- Highest concentration of SAR 37.7  
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 60

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 100'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 0

NA Highest concentration of Benzene (µg/l)           
NA Highest concentration of Toluene (µg/l)           
NA Highest concentration of Ethylbenzene (µg/l)           
NA Highest concentration of Xylene (µg/l)           
NA Highest concentration of Methane (mg/l)         

### Surface Water

0 Number of surface water samples collected  
0 Number of surface water samples exceeding 910-1  
If surface water is impacted, other agency notification may be required.

## OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)                      Volume of liquid waste (barrels)                     

☒ Is further site investigation required?

Caerus will install at least one soil boring at a later date to determine remediation effectiveness and demonstrate compliance with COGCC Table 915-1.

# REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes \_\_\_\_\_

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Attached please find the report of work completed demonstrating vertical and horizontal delineation of the spill area. Based on 1) the localized impacts found in the 30 - 55 foot depth of the point of release (SB01), and 2) the adequate radius of influence and communication between the soil borings installed at the site; Caerus plans to utilize soil vapor extraction (SVE) to complete remediation of the site. Caerus proposes to utilize a solar powered SVE trailer with gasoline powered trailer SVE events on a quarterly basis to augment remediation of the site. Caerus will monitor the exhaust coming from the SVE wells to indicate remediation progress. Once SVE exhaust demonstrates reduction of hydrocarbons in the exhaust, Caerus will install a soil boring in the area of the spill to demonstrate compliance with all exceedances found within SB01 of the attached report.

## REMEDICATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Attached please find the report of work completed demonstrating vertical and horizontal delineation of the spill area. Based on 1. the localized impacts found in the 30 - 55 foot depth of the point of release (SB01), and 2. the adequate radius of influence and communication between the soil borings installed at the site; Caerus plans to utilize soil vapor extraction (SVE) to complete remediation of the site. Caerus proposes to utilize a solar powered SVE trailer with gasoline powered trailer SVE events on a quarterly basis to augment remediation of the site. Caerus will monitor the exhaust coming from the SVE wells to indicate remediation progress. Once SVE exhaust demonstrates reduction of hydrocarbons in the exhaust, Caerus will install a soil boring in the area of the spill to demonstrate compliance with all exceedances found within SB01 of the attached report.

## Soil Remediation Summary

☒ In Situ

Yes Bioremediation ( or enhanced bioremediation ) \_\_\_\_\_

No Chemical oxidation \_\_\_\_\_

Yes Air sparge / Soil vapor extraction \_\_\_\_\_

Yes Natural Attenuation \_\_\_\_\_

No Other \_\_\_\_\_

☐ Ex Situ

Excavate and offsite disposal \_\_\_\_\_

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

Excavate and onsite remediation \_\_\_\_\_

Land Treatment \_\_\_\_\_

Bioremediation (or enhanced bioremediation) \_\_\_\_\_

Chemical oxidation \_\_\_\_\_

Other \_\_\_\_\_

## Groundwater Remediation Summary

No Bioremediation ( or enhanced bioremediation ) \_\_\_\_\_

No Chemical oxidation \_\_\_\_\_

No Air sparge / Soil vapor extraction \_\_\_\_\_

No Natural Attenuation \_\_\_\_\_

No Other \_\_\_\_\_

## GROUNDWATER MONITORING

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

Groundwater was not encountered during soil boring installation at the site.

## REMEDATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other \_\_\_\_\_

**Report Type:** ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☒ Other Report of Work Completed Report and SVE ROI results \_\_\_\_\_

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No \_\_\_\_\_

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_

E&P waste (solid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No \_\_\_\_\_

Do all soils meet Table 910-1 standards? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Caerus anticipates the extent of contamination will be contained to the active well pad surface. Caerus plans to backfill the excavation to the active working surface of the well pad for continued operation.

Is the described reclamation complete? No \_\_\_\_\_

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim? ☐ Final?

Did the Surface Owner approve the seed mix? Yes \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? Yes \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, if known. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 07/15/2020

Date of commencement of Site Investigation. 07/20/2020

Date of completion of Site Investigation. 12/16/2020

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 01/12/2021

Date of completion of Remediation. \_\_\_\_\_

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

### **OPERATOR COMMENT**

The attached report outlines the results from the delineation of impacts associated with this spill. Also included is a figure depicting the radius of influence associated with the soil vapor extraction wells. Caerus installed a solar powered SVE trailer on January 12, 2021 to begin remediation of the impacts associated with the spill. Caerus will also conduct powered SVE activities at the site on a quarterly basis to aid in remediation of the site.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Blair Rollins

Title: EHS Specialist

Submit Date: \_\_\_\_\_

Email: brollins@caerusoilandgas.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 15947

### **COA Type**

### **Description**

|  |  |
|--|--|
|  |  |
|--|--|

### **Attachment Check List**

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

### **Att Doc Num**

### **Name**

|           |                   |
|-----------|-------------------|
| 402569757 | MONITORING REPORT |
| 402569759 | MAP               |

Total Attach: 2 Files

### **General Comments**

### **User Group**

### **Comment**

### **Comment Date**

|  |  |                     |
|--|--|---------------------|
|  |  | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)